R E M A R K S

Reconsideration of this application is respectfully requested.

THE CLAIMS

Claims 23-29 have been canceled along with previously canceled claims 1-10, 19 and 20, and claims 11-18, 21 and 22 have been maintained.

THE PRIOR ART REJECTION

Claims 11, 14, 15, 18, 21 and 22 were rejected under 35 USC 102 as being anticipated by JP 2002-101331 ("Tatsuya"), and claims 12, 13, 16 and 17 were rejected under 35 USC 103 as being obvious in view of the combination of Tatsuya and USP 6,583,820 ("Hung"). These rejections, however, are respectfully traversed.

According to the present invention as recited in independent claims 11 and 15 an image pickup apparatus is provided which comprises an image pickup element for picking up an image of an object, a shutter key for producing an operation signal when depressed, and a main control unit for directly receiving the operation signal produced by operating the shutter key. As recited in amended independent claims 11 and 15, the main control unit senses an initial change to an on state in the operation

signal and provides an instruction to cause the image pickup element to start to pick up the image of the object when the on state is sensed once, and the main control unit determines that the shutter key is released when an off state of the operation signal is sensed successively a predetermined number of times by sampling the operation signal at predetermined intervals of time.

According to the present invention as recited in amended independent claims 21 and 22, moreover, an image pickup method is provided which comprises directly receiving an operation signal produced by depression of a shutter key, sensing an initial change to an on state in the operation signal and then instructing an image pickup element to pick up an image of an object when the on state is sensed once, and determining that the shutter key is released when an off state of the operation signal is sensed successively a predetermined number of times by sampling the operation signal at predetermined intervals of time.

That is, according to the present invention as recited in amended independent claims 11, 15, 21 and 22, when an initial change to an on state in the operation signal is sensed, an instruction to cause the image pickup element to start to pick up the image of the object is provided when the on state is sensed once (see line 4 in Fig. 2B). However, the shutter key is determined to be released when an off state of the operation

signal is sensed successively a predetermined number of times by sampling the operation signal at predetermined intervals of time (again, see line 4 in Fig. 2B). In other words, the shutter key is determined to be depressed immediately upon sensing an initial change to the on state in the operation signal, but the shutter key is determined to be released only when the off state of the operation signal is sensed successively a predetermined number of times. With this structure, time lag in initiating an image pick up operation is eliminated, while erroneous detection of release of the shutter key is avoided. See the disclosure in the specification at page 11, line 23 to page 14, line 16.

On page 3 of the Final Office Action, the Examiner asserts that paragraphs [0023]-[0027] of Tatsuya disclose determining that the shutter key is released when an off state of an operation signal is sensed successively a predetermined number of times by sampling the operation signal at predetermined intervals of time, as according to the claimed present invention. In particular, the Examiner asserts that in Tatsuya, "when the shutter key is released, an off state of the operation signal is sensed successively a predetermined number of times after OFF as illustrated in Fig. 4(a) in order for the camera to maintain the off state of the shutter function properly as disclosed."

It is respectfully pointed out, however, that Fig. 2 of Tatsuya discloses that the judgement of whether or not the

shutter key is released or not is performed first (in step SA1 => SA1 "NO") and then the judgement (or wait) of whether or not the chattering time passes (step SA 9) is performed.

By contrast, according to the claimed present invention the off-state of the operation signal is counted first, and if the off state of the operation signal is sensed successively a predetermined number times, then it is determined that the shutter key is released. In other words, according to the claimed present invention, first it is judged whether the chattering time passes or not, and then (after the chattering time passes) it is determined that the shutter key is released. And it is respectfully submitted that the process of judging the shutter key release and waiting for the chattering time are in reverse order in Tatsuya as compared to the claimed present invention.

In addition, it is respectfully pointed out that the mark "↓" shown in Fig. 4 of Tatsuya merely shows the time when image data is captured, and is not a time that an off state of an operation signal is sampled or detected a predetermined number of times to detect the release of the shutter key, as according to the claimed present invention.

Still further, it is respectfully submitted that Tatsuya also does not disclose or suggest the feature of the claimed present invention whereby when an initial change to an on state

in the operation signal is sensed, an instruction to cause the image pickup element to start to pick up the image of the object is provided when the on state is sensed once. In this connection, it is respectfully pointed out that Tatsuya merely discloses in paragraph [0024] that judging whether the shutter key is pressed is based on the key input signal sent from key block 11. That is, Tatsuya merely discloses that the judgement is achieved by using the key input signal. And it is respectfully submitted that there is no disclosure in Tatsuya of detecting a rising (edge) of an operation signal (shutter key's on signal) to determine that the shutter key is pressed as according to the claimed present invention.

That is, according to the claimed present invention, when an initial change to an on state in the operation signal is sensed, an instruction to cause the image pickup element to start to pick up the image of the object is provided when the on state is sensed once, whereas Tatsuya merely discloses determining that the shutter key is pressed based on a key input signal. And it is respectfully submitted that Tatsuya cannot achieve the advantageous effect achieved by the claimed present invention whereby shutter time lag is minimized.

It is respectfully submitted, moreover, that Hung and all of the other cited references also fail to disclose or suggest the

above described features and advantageous effects of the claimed present invention.

In view of foregoing, it is respectfully submitted that the present invention as recited in independent claims 11, 15, 21 and 22, and claims 12-14 and 16-18 respectively depending from independent claims 11 and 15, clearly patentably distinguishes over the cited references, taken singly or in any combination, under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned for prompt action.

Respectfully submitted,

/Douglas Holtz/

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